Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Chemistry 312

Chapter 1

**INTRODUCTION TO CHEMISTRY**

**OUTLINE**

1.2 🡪 Chemistry & Matter

*Vocabulary*

chemistry matter mass

weight

*Objectives*

- **Define** chemistry and matter.

- **Compare** and **contrast** mass and weight.

- **Explain** why chemists are interested in a submicroscopic description of matter.

1.3 🡪 Scientific Methods

*Vocabulary*

scientific method qualitative data quantitative data

hypothesis experiment independent variable

dependent variable control conclusion

model theory scientific law

*Objectives*

- **Identify** the common steps of scientific methods.

- **Compare** and **contrast** types of data.

- **Compare** and **contrast** types of variables.

- **Describe** the difference between a theory and a scientific law.

1.4 🡪 Scientific Research

*Vocabulary*

pure research applied research technology

*Objectives*

- **Compare** and **contrast** pure research, applied research, and technology.

- **Apply** knowledge of laboratory safety.

**HOMEWORK**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Assignment* | *Date Due* | *Chapter.Section* | *Page(s)* | *Problem(s)* |
| 1 |  | 1.2 | 9 | 6, 7, 10 |
| 2 |  | 1.3 | 13 | 11, 12, 14, 16 |
| 3 |  | 1.4 | 17 | 17 |



**CHAPTER 3: MATTER, PROPERTIES & CHANGES OUTLINE**

3.1 🡪 Properties of Matter

*Vocabulary*

substance physical property extensive property

intensive property chemical property states of matter

solid liquid gas vapor

*Objectives*

- **Identify** the characteristics of a substance.

- **Distinguish** between physical and chemical properties.

- **Differentiate** among the physical states of matter.

3.2 🡪 Changes in Matter

*Vocabulary*

Law of conservation of mass chemical change physical change

*Objectives*

- **Define** physical change and list several common physical changes.

- **Define** chemical change and list several indications that a chemical change has taken place.

- **Apply** the law of conservation of mass to chemical reactions.

3.3 🡪 Mixtures of Matter

*Vocabulary*

mixture heterogeneous mixture homogeneous mixture crystallization

solution filtration distillation chromatography

*Objectives*

- **Contrast** mixtures and substances.

- **Classify** mixtures as homogeneous or heterogeneous.

- **List** and **describe** several techniques used to separate mixtures.

3.4 🡪 Elements & Compounds

*Vocabulary*

law of multiple proportions periodic table compound

law of definite proportions percent by mass element

*Objectives*

- **Distinguish** between elements and compounds.

- **Describe** the organization of elements on the periodic table.

- **Explain** how all compounds obey the laws of definite and multiple proportions.

**HOMEWORK**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Assignment* | *Date Due* | *Chapter.Section* | *Page(s)* | *Problem(s)* |
| 4 |  | 3.1 | 60 | 2, 3, 5 |
| 5 |  | 3.2 | 65 | 10-14 |
| 6 |  | 3.3 | 69 | 15-19 |
| 7 |  | 3.4 | 77 | 25, 26, 28, 30 |

**REVIEW ASSIGNMENT**

|  |  |
| --- | --- |
| *Page* | *Problem(s)* |
| 22 | 27, 29, 31, 32, 33, 37, 38, 39 |
| 23 | 1-7 (odd) |
| 82 | 34, 37, 39, 41, 47, 49, 57, 61, 68, 69, 71 |
| 85 | 1-9 (odd) |